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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/754,988	01/05/01	PALUMBO	P 99097CIP

EXAMINER	
ART UNIT	PAPER NUMBER
1714	3

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/754,988	Palumbo et al.
Examiner	**Art Unit**
Callie Shosho	1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-39 is/are pending in the applica

4a) Of the above, claim(s) _____ is/are withdrawn from considera

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-39 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirem

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

Application Number: 09/754,988

Art Unit: 1714

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4, 9-11, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claims 4, 9, and 17 each recite improper Markush groups. It is advised that in line 2 of each of the claims "of" is inserted after "consisting".

(b) Claim 4 recites that the organic group is selected from "carboxylic acid or esters, acid chlorides, sulfonyl chlorides, ..., and derivatives thereof". The scope of the claim is confusing because it is not clear what compounds are encompassed by the phrase "derivatives thereof". What compounds are considered derivatives?

Similar questions arise in claims 9 and 17 which also recite the phrase "derivatives thereof".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1, 3-9, 21-24, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Bruhnke (U.S. 5,766,268).

Bruhnke discloses a method of making a modified pigment, ABXYZ, which comprises reacting a chromophore, A, having attached an electrophilic group, B, such as sulfatoethyl sulfone, with nucleophilic group, X, which is attached to polyoxyalkylene, Y. It is further disclosed that the modified pigment is used in an ink composition (col.2, line 59-col.3, line 15, col.4, line 18, col.4, line 45-col.5, line 28, and col.6, line 10).

In light of the above, it is clear that Bruhnke anticipates the present claims.

5. Claims 1, 3-5, 8-13, 30-32, and 38-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Moffatt et al. (U.S. 6,221,932).

Moffatt et al. disclose a method of making a modified pigment comprising reacting a pigment having attached an electrophilic functional group with a nucleophilic group-containing polymer such as polyethylene glycol, polyamine, and polyethyleneimine. The reaction occurs by nucleophilic substitution or acylation reaction. It is further disclosed that the modified pigment is suitable for use in ink jet ink (col.4, line 29-col.5, line 41, col.6, lines 50-60, and col.7, lines 53-58).

In light of the above, it is clear that Moffatt et al. anticipates the present claims.

6. Claims 1, 3-5, 8-9, 12, 14-15, 20, 30-33, and 38-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Ikeda et al. (U.S. 5,952,429).

Ikeda et al. disclose a method for making a modified pigment comprising reacting a carbon black pigment which comprises an electrophilic functional group with polymer which comprises nucleophilic reactive group. It is disclosed that this product is then further reacted with an additional organic group such as succinic anhydride. The polymers include poly(meth)acrylate and polyalkylene glycol. It is further disclosed that the modified pigment is suitable for use in ink jet ink (col.8, lines 29-36, col.8, line 61-col.9, line 2, col.12, lines 23-40, col.3, lines 36-42, col.6, lines 33-38, col.17, lines 31-62, col.20, lines 17-23, col.30, line 29, col.42, lines 6-15, col.43, lines 49-50, and col.54, lines 39-41).

In light of the above, it is clear that Ikeda et al. anticipates the present claims.

7. Claims 1-5, 8-9, 12-13, 26-28, and 36-37 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/51690.

WO 99/51690 disclose a method of making a modified pigment comprising reacting a pigment having attached chemical group such as benzoic acid which is prepared by reacting a diazonium salt having the chemical group with the pigment to produce a modified pigment which is then reacted with amine-containing polymer such as polyvinyl alcohol or polyacrylate. The pigments include blue, black, brown, red, yellow, etc. pigment including carbon black. It is further disclosed that the modified pigment is suitable for use in ink jet ink (page 5, line 25-page 6, line 8, page 6, lines 28, page 16, lines 6 and 14-16, page 8, lines 23-27, page 9, lines 25-27, page 10, lines 4-9, page 12, line 35, example 1, and example 8).

In light of the above, it is clear that WO 99/51690 anticipates the present claims.

8. Claims 1-5, 8-9, 12, and 14-19 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/31175.

WO 99/31175 discloses a method of making a modified pigment comprising reacting carbon black pigment which has an attached organic group which has an attached ionic group with at least one polymer which attaches to the ionic group. The polymer includes polyacrylate, the organic group, which is attached by reacting a diazonium salt having the organic group with the pigment, includes aromatic and alkyl group substituted with amine, carboxylic acid, sulfonic acid, phosphonic acid, acrylate, etc., and the ionic group includes anionic or cationic group such

as amine, carboxylic acid, sulfonic acid, phosphonic acid, etc. (page 4, line 22, page 5, lines 16-27, page 6, lines 4-28, page 12, line 14-page 13, line 2, and page 16, lines 8-13).

In light of the above, it is clear that WO 99/31175 anticipates the present claims.

9. Claims 1, 3-5, 8-9, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Kwan (U.S. 6,235,829).

Kwan discloses a method of making a modified pigment comprising reacting pigment which has functional group such as carboxylic, hydroxyl amino, and N, S, or O containing group with polymer which has reactive group such as hydroxyl, carboxylic, isocyanate, and amino group. The polymer includes polyacrylate (col.2, lines 30-50 and col.3, lines 1-21, 27-34, and 38).

In light of the above, it is clear that Kwan anticipates the present claims.

10. Claims 1 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Aida et al. (U.S. 5,716,435).

Aida et al. disclose a method of making a modified pigment comprising reacting a pigment having attached electrophilic group with a nucleophilic group. The pigments include magenta, cyan, and yellow pigments (col.5, lines 10-57).

In light of the above, it is clear that Aida et al. anticipates the present claims.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

13. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bruhnke (U.S. 5,766,268) in view of Moffatt et al. (U.S. 6,221,932).

The disclosure with respect to Bruhnke in paragraph 4 above is incorporated here by reference.

The difference between Bruhnke and the present claimed invention is the requirement in the claims of specific type of polymer.

Moffatt et al., which is drawn to ink composition comprising modified pigment, disclose attaching polymer such as polyethyleneimine to pigment in order to produce an ink with increased smearfastness, enhanced print quality, and improved bleed control. Moffatt et al. further disclose the equivalence and interchangeability of polyoxyalkylene, as disclosed by Bruhnke, with polyethyleneimine (col.1, lines 15-23, col.5, lines 43-44 and 53, and col.6, lines 50-60).

In light of the motivation for using specific type of polymer disclosed by Moffatt et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such polymer in the pigment of Bruhnke in order to produce an ink with increased smearfastness, enhanced print quality, and improved bleed control, and thereby arrive at the claimed invention.

14. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/51690 in view of Moffatt et al. (U.S. 6,221,932).

The disclosure with respect to WO 99/51690 in paragraph 7 above is incorporated here by reference.

The difference between WO 99/51690 and the present claimed invention is the requirement in the claims of specific type of polymer.

Moffatt et al., which is drawn to ink composition comprising modified pigment, disclose attaching polymer such as polyethyleneimine to pigment in order to produce an ink with increased smearfastness, enhanced print quality, and improved bleed control. Moffatt et al. further disclose the equivalence and interchangeability of polyvinyl alcohol, as disclosed by WO 99/51690, with polyethyleneimine (col.1, lines 15-23 and col.5, lines 49 and 52).

In light of the motivation for using specific type of polymer disclosed by Moffatt et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such polymer in the pigment of WO 99/51690 in order to produce an ink with increased smearfastness, enhanced print quality, and improved bleed control, and thereby arrive at the claimed invention.

15. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bruhnke (U.S. 5,766,268).

The disclosure with respect to Bruhnke in paragraph 4 above is incorporated here by reference.

The difference between Bruhnke and the present claimed invention is the requirement in the claims of using the modified pigment in ink jet ink.

Bruhnke discloses that the modified pigment is suitable for use in ink (col.6, line 9-10), but does not explicitly disclose the use of ink jet ink.

However, it would have been within the skill level of one of ordinary skill in the art to recognize that the broad disclosure of ink by Bruhnke encompasses all types of ink including ink jet ink. Therefore, it would have been obvious to one of ordinary skill in the art to use the modified pigment of Bruhnke in any type of ink, including ink jet ink, and thereby arrive at the claimed invention.

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tsang et al. (U.S. 6,150,433) disclose modified pigment formed by attaching polymer to pigment via an olefinic group.

Batlaw et al. (U.S. 5,919,846) disclose a colorant which is the addition product of an organic chromophore with at least one hydroxyl or amine substituent, a polyisocyanate, and carboxylic acid.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie Shosho whose telephone number is (703) 305-0208. The examiner

can normally be reached on Mondays-Thursdays from 7:00 am to 4:30 pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

CS

Callie Shosho

10/11/01

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